

# Mecklenburg County

## Common Code Defects

### Core Process

### Mechanical

#### Code Defects

- Gas Piping test low/bad gauge

#### Code Description

**406.1.3 testing.** A piping system shall be permitted to be tested as a complete unit or in sections. Under no circumstances shall a valve in a line be used as a bulkhead between gas in one section of the piping system and test medium in an adjacent section, unless two valves are installed in series with a valved "tell-tale" located between these valves. A valve shall not be subjected to the test pressure unless it can be determined that the valve, including the valve closing mechanism, is designed to safely withstand the test pressure.

**406.1.4 Regulators and valve assemblies.** Regulator and valve assemblies fabricated independently of the piping system in which they are to be installed shall be permitted to be tested with inert gas or air at the time of fabrication.

**406.2 Test medium.** The test medium shall be air or an inert gas. Oxygen shall not be used.

**406.3 Test preparation.** Pipe joints, including welds, shall be left exposed for examination during the test. If the pipe end joints have been previously tested in accordance with this Code, they shall be permitted to be covered or concealed.

**406.3.1 Expansion joints.** Expansion joints shall be provided with temporary restraints, if required, for the additional thrust load under test.

**406.3.2 Equipment isolation.** Equipment that is not to be included in the test shall be either disconnected from the piping or isolated by blanks, blind flanges, or caps. Flanged joints at which blinds are inserted to blank off other equipment during the test shall not be required to be tested.

**406.3.3 Equipment disconnection.** Where the piping system is connected to equipment or components designed for operating pressures of less than the test pressure, such equipment or equipment components shall be isolated from the piping system by disconnecting them and capping the outlet(s).

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**406.3.4 Valve isolation.** Where the piping system is connected to equipment or components designed for operating pressures equal to or greater than the test pressure, such equipment shall be isolated from the piping system by closing the individual equipment shutoff valve(s).

**406.3.5 Testing precautions.** All testing of piping systems shall be done with due regard for the safety of employees and the public during the test. Bulkheads, anchorage, and bracing suitably designed to resist test pressures shall be installed if necessary. Prior to testing, the interior of the pipe shall be cleared of all foreign material.

**406.4 Test Pressure measurement.** Test pressure shall be measured with a manometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss due to leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made.

**406.4.1 Method of Testing.** *Low pressure gas piping shall stand a pressure of at least 10 psi for a period of not less than 10 minutes without showing any drop in pressure. High-pressure piping, 5 psi and greater must withstand a pressure of at least 50 psi for a period of not less than 10 minutes without showing any drop in pressure.*

**406.4.2 Test instruments.** *For these tests, pressure shall be measured with a monometer or slope gauge or other accurate and sensitive pressure indicating device, the scale of which is so graduated that variations in pressure may be accurately read. All necessary apparatus for conducting the pressure test shall be furnished by the installer.*

**406.5 Detection of leaks and defects.** The piping system shall withstand the test pressure specified without showing any evidence of leakage or other defects.

Any reduction of test pressures as indicated by pressure gages shall be deemed to indicate the presence of a leak unless such reduction can be readily attributed to some other cause.

***Disclaimer: There may be other ways to comply with the Code. If so, you are not required to use this method to comply with the Code. You may want to investigate other options, or consult with a design professional identifying an equally code compliant solution.***

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## End Notes

North Carolina Plumbing Code & North Carolina Mechanical Code & North Carolina Fuel Gas Code.

International Code Council

Southern Building Code Congress